

A Study on Willingness to Pay of Household Solid Waste Management in Kureepuzha of Kollam District, Kerala

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Abstract

Since the origin of human beings, there exists a parallel waste generation. Human wants are unlimited; the generation of waste also differs. With the increase in industrial growth and urbanisation, waste generation was also going at an alarming rate. The improper disposal of waste will lead to a rise in the pollution level. It can be managed from the household level. So the study was based on the willingness to pay by the household for the household solid waste management and the reasons behind the non-willingness to pay.

Keywords: Waste Generation, Urbanisation, Pollution, Willingness to Pay

Introduction

Waste generation was one of the major issues faced by India in recent years. From the origin of human beings, there has been a parallel generation of waste, be it for food production or other human needs. Due to urbanisation, human wants becoming unlimited. The change in human wants leads to the difference like waste generation. To meet the demand of the people, various kinds of factories come into existence. It will lead to the formation of a dangerous type of waste in our economy. Besides other human problems, waste disposal and its proper management also become one of the serious concerns.

With the increasing industrial growth and urbanisation, the generation of waste has been increasing in various varieties and volumes. These wastes are filled in open places and corners. Municipal Corporation attempted to collect wastes from different households and different areas. But it has failed to reach all areas and also in a proper manner. The open disposal of garbage waste spreads diseases and also increase the number of stray dogs, rats, cats etc in the areas which will disturb the human living. The lifestyle of the people living in India also increases garbage pollution because very few people will manage the garbage in a proper way.

In Kerala, the management of waste is a major question in the current scenario. The Municipal Administration in Kerala fails to deal with the waste management program effectively because of a lack of technological and limited resources. Despite the highly educated population here, the slogan 'waste generators are responsible for waste treatment, and disposal has not yet reached the hearts of the people. Public participation and involvement in the awareness program will lead to a success story to manage solid

waste. Internationally, SWM is a highly concerned subject matter as compared to the national level. But in Kerala, especially in Kollam, the MSWM has less serious thought regarding the problem of waste management. To protect both the environment and human health, MSWM needs a crucial concentration of all operational areas. Municipalities and Corporations are presently impotent to perform their work to maintain sustainability. In this context, the willingness to pay regarding solid waste collection in the area is yet to be addressed. So, the present study deals with the household willingness to pay for waste management.

Objectives

The present article aims to analyse the following objective.

- To estimate a charge based on the willingness to pay by the household for household solid waste management.

Review of Literature

Katia Karousakis and Ekin Birol (2006) examined the household preferences regarding Kerbside Recycling Services in London. The contingent valuation method was used for the study to estimate households' valuation towards the services in monetary terms. In London, 188 households were selected as samples for analysing the willingness to pay by the households to collect dry materials, compost, textiles and so on. The data analysis was carried out using the Conditional Logit (CL) Model and Random Parameter Logit (RPL) Model. The study aims to experiment to find out household willingness to pay for Kerbside recycling services and the socio-economic and attitudinal characteristics which affect the willingness to pay of households. It has been found out that these characteristics of the households should value the recycling service as significant and incorporate with economic theory. The study concluded that to meet the recycling services target in London, creating incentives for recycling was required.

Longe et. al. (2009) studied the People's Perception of Household Solid Waste Management in Ojo Local Government Area in Nigeria. A survey method was used for the collection of the data. A sample of 30 households from 11 selected residential

areas with a focus of 60 respondents in Ojo was selected for the study. The study found that more than half of the people are willing to pay for the private service providers than the public service provider. Only a few of the low-income group prefers public service providers. Thus they suggested that the integration of private and public service providers and the introduction of modern techniques for waste management lead to creating a better environment and quality of life for people.

Wang et.al (2011) attempted a study on economic analysis conducted in a small town (Yumuna, China). The study focuses on the people's willingness to pay for an efficient solid waste collection and its treatment. A multiple bounded discrete choice (MBDC) contingent valuation surveys collect information from the households for possible, solid waste management services. It has been found that the willingness to pay is dependent on the trust held by the households regarding the implementation of effective waste management. Those who strongly believed that effective solid waste management was possible were willing to pay more.

Gasim (2019) attempted a case study on municipal solid waste management in Juba, South Sudan. The study shows that to control the waste generation in the city how the government involves the community in this situation. The performance of existing solid waste collection, disposal, and residents' willingness to participate and identify problems related to waste generation were the factors included in the study to examine solid waste management. The study is mainly based on primary data, which consist of questionnaires, interviews and observations. It has been found that about 90% of sample participants refused to pay fees for waste collection. Hence, it suggested that the success of people based solid waste management depends on the participation of the households and has a great relationship with its local economy.

Methodology

The study was based on primary data and the data were collected using a structured questionnaire. The survey was conducted in December 2019. A single area from Kollam Corporation known as Kureepuzha was chosen for the present study. Since the instalment of waste dipo in Kureepuzha the residents, have been affected. This has met with several and frequent

protests and consequently led to the introduction of better waste management facilities. The sample consists of 92 households having different incomes and education levels. The data was calculated using a frequency table, averages and percentages for descriptive analysis. The contingent valuation method was used to analyse the maximum amount of money that the household would be willing to pay per month for household solid waste management.

Result and Discussion

Willingness to Pay by the Households

Table 1: Households Willingness to Pay for Waste Disposal

WTP	Frequency	Percent
Yes	73	79.35
No	19	20.65
Total	92	100.00

Source: Primary Data

Household willingness to pay for the collection of solid waste is shown in table 1. Nearly 79.35 percent of the respondents were willing to pay for the collection of household solid waste and 20.65 percent of the household are not willing to pay for the waste collection by the municipal corporation.

One-third of the households are willing to pay for the waste emitted by the respondents at the household level.

Table 2: Amount Willing to Pay by the Households

Amount (Rs.)	Frequency	Percent
Below 50	39	53.42
51 – 100	17	23.29
101 – 150	12	16.44
Above 151	5	6.85
Total	73	100.00

Source: Primary Data

The households were asked to suggest how much they were willing to pay per month to remove solid waste from the households. The WTP amount is divided into four categories. They are below 50, 51 to 100, 101 to 150 and above 151 rupees. Among 73 respondents, 53.42 percent were willing to pay below Rs 50, 23.29 percent were willing to pay between Rs. 51 to Rs. 100, 16.44 percent were willing to pay between Rs.101 to Rs. 150, and 6.85 percent of the

respondents were willing to pay above Rs. 151.

More than half of the respondents in the area are willing to pay to achieve a healthy environment.

Table 3: Mode of Collection for Solid Waste for Management

Mode of Collection	Frequency	Percent
Direct Payment	40	54.79
A cess with electricity charges	11	15.07
A cess with water charges	15	20.55
Access on income tax	7	9.59
Total	73	100.00

Source: Primary Data

The households were asked to suggest what mode they wanted to pay for managing the solid waste was shown in table 3. About half (54.79 percent) of the households choose direct payment as a method of collection, while 20.55 percent had opined that a cess with water charges is the easy way for the payment in managing solid waste. Payment on a cess with electricity charges was chosen by 15.07 percent of the households. Only 9.59 percent of the respondents chose a cess on income tax as a method used for the payment for managing the solid waste.

More than half of the households want to pay as a direct method for managing household solid waste.

Table 4: Reasons for Non-Willingness to Pay by Households

Reason for NWTP	Frequency	Percent
We are poor and we can't pay	4	21.05
We are satisfied with the current situation	5	26.32
Proper management of solid waste is the responsibility of corporation	8	42.11
Other reasons	2	10.53
Total	19	100.00

Source: Primary Data

Table 4 analyses the reason for the non-willingness to pay for the solid waste management by the household in Kureepuzha. The reasons include people being poor and they can't pay; people are satisfied with the current situation, people

thinking that proper management of solid waste is the responsibility of corporation and other reasons. Out of 19 respondents who are not willing to pay, 42.11 percent (8) of the households felt that proper management of solid waste is the responsibility of corporation, while 26.32 percent (5) of the households are satisfied with the current situation, 21.05 percent (4) had an opinion that they are poor and can't pay for the waste management, 10.53 percent (2) of the household had other reasons for the unwillingness to pay. The other reasons are: people think that only the polluters should pay for it, the payment is not necessary, payment does not allow fuller treatment etc.

Conclusion

A good environment is one of the important factors that determine a better quality of life. But waste generation has become a cause of concern in our economy. The magnitude of solid generation was also going at an alarming rate which led to a rise in the pollution level. Since pollution cannot be avoided completely, waste generation should be managed to an extent. The study primarily focuses on the household level treatment of solid waste. Hardly any garbage is used in the area to carry out the disposal. Houses need garbage bins for better management. But if we analyse the willingness to pay off the households regarding household solid waste management, it has been found that the majority of the respondents are willing to pay and only a few are not willing to pay due to certain reasons. Among the respondents who are willing to pay, they prefer direct payment for household waste management. Being waste generators, most people believe that they need to play a major role in the management of waste which reflects on their willingness to pay. This is no less a social responsibility to maintain a healthy environment.

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